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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,250	11/26/2003	Hun Jeoung	8733.947.00-US	6123

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EXAMINER

NGUYEN, JIMMY H

ART UNIT PAPER NUMBER

2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/29/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/721,250	Applicant(s) JEOUNG ET AL.	
	Examiner Jimmy H. Nguyen	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>5-11-05</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is made in response to applicants' papers filed on 11/26/2003. Claims 1-20 are currently pending in the application. An action follows below:

Claim Objections

2. Claims 1, 4, 6, 9 and 16 are objected to under 37 CFR 1.75(a) because although these claims meet the requirement 112/2d, i.e., the metes and bounds are determinable, however, the following changes should be made:

As to claim 1, "the dummy pixel signals represent a **substantially** identical brightness level" in last two lines should be changed to -- absolute brightness levels of the dummy pixel signals are identical --, because the specification does not fairly provide a standard brightness level of the dummy pixel signal so that one of ordinary skill in the art would know what was meant by "substantially identical". Also, see claim 9, last two lines.

As to claim 4, "the digital dummy pixel data represents a **substantially** identical brightness level" in last two lines should be changed to -- absolute brightness levels of the dummy pixel signals are identical --, see the objection to claim 1 above.

As to claim 6, "the data apply period" in last line should be changed to -- the blanking period --, see Fig. 8, claims 12 and 19.

As to claim 9, "brightness levels of the dummy pixel signals are **substantially** identical" in last two lines should be changed to -- absolute brightness levels of the dummy pixel signals are identical --, see the objection to claim 1 above.

As to claim 16, "the plurality of dummy pixel signals comprise **substantially** identical absolute voltage values" in last two lines should be changed to -- the absolute brightness levels of the plurality of dummy pixel signals are identical --, see the objection to claim 1 above.

It is in the best interest of the patent community that applicant, in his/her normal review and/or rewriting of the claims, to take into consideration these editorial situations and make changes as necessary.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-7, 9-13, 15, 16, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nakamura (US 7,002,563 B2).

As to claims 1, 2 and 9, the claimed invention reads on Nakamura as follows: Nakamura discloses a liquid crystal display (LCD) device and an associate driving method, the LCD comprising an LCD panel (Fig. 3 shows an LCD panel including Tufts Tim, LC pixels Pig, capacitor Cist, and their connections) including a plurality of gate lines (gate lines G1-Gm, see Fig. 3); a plurality of data lines (signal lines S1, S2; see Fig. 3) crossing the plurality of gate lines; and a plurality of liquid crystal cells (pixels Pig, see Fig. 3) arranged at crossings of plurality of gate and data lines; and a LCD panel driver (10, 20, FPC and PCB, see Fig. 3) including a gate driver (a gate line driving circuit 10, see Fig. 3) sequentially driving gate lines

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(G) during the data apply period (a horizontal display period, see Fig. 4, col. 4, lines 61-64) and a data driver (a signal line driving circuit 20, see Fig. 3) applying effective pixel signals to the plurality of data lines during the data apply period (see waveform of V_s during a horizontal display period, as shown in Fig. 4, see col. 7, lines 1-12) and dummy pixel signals (signals with a fixed potential, see col. 7, lines 13-22) to the plurality of data lines during the blanking period (see waveform of V_{Sj} during a horizontal blanking period, as shown in Fig. 4). Accordingly, the elements and the steps in these claims are read in the Nakamura reference.

As to claims 3 and 4, Nakamura further teaches the data driver (20) including an DAC or a plurality of Daces (see Figs. 5 and 6, col. 7, lines 36-64) for converting digital pixel data and digital dummy pixel data, received from a timing controller (a PCB, see Fig. 3, col. 4, lines 20-39), to analog signals.

As to claim 10, as noting in Figs. 3 and 4, Nakamura discloses that after a fixed potential applied to all signal lines (S) during a shift pulse S_{py} , all switches ASWs are in TFT-OFF condition, thereby rendering all signal lines (S) being floated until the end of horizontal blanking period.

As to claims 15 and 16, since these claims similarly recite the limitations of claim 10, these claims are therefore rejected for the same reason set in claim 10.

As to claims 5, 11 and 18, Nakamura teaches polarities of effective pixel signals applicable to adjacent ones of data lines are invertible by the data driver during the data apply period (see Fig. 4, waveform V_{Sj} during the horizontal display periods). Further, see col. 8, lines 42-58.

As to claims 6, 12 and 19, Nakamura teaches polarities of the dummy pixel signals applicable to adjacent ones of data lines are invertible by the data driver during the blanking period (see Fig. 4, waveform VSj during horizontal blanking periods). Further, see col. 8, lines 42-58.

As to claims 7, 13 and 20, Nakamura teaches polarities of effective pixel signals applicable to the plurality of data lines during sequential ones of horizontal periods are invertible by the data driver during the data apply period (see Fig. 4, waveform VSj during the horizontal display periods). Further, see col. 8, lines 42-58.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 8, 14 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura, and further in view of Suzuki et al. (US 5,598,180), hereinafter Suzuki.

As to these claims, as discussed in the above rejections, Nakamura discloses all the claimed limitations except for the dummy pixel signals being white signal, as present claimed.

However, Suzuki discloses an active matrix LCD comprising a control circuit inputting white-level signal to signal-line drive IC circuit, which applies a white-level potential to each signal line during the blanking period, in order to ensure no image being displayed during the blanking period (see col. 8, lines 18-25). It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to make the dummy pixel signal of Nakamura to

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be white-level signal, in view of the teaching in the Suzuki reference, because this would ensure unwanted image being displayed during the blanking period, as taught by Suzuki, thereby improve the image quality.

Conclusion

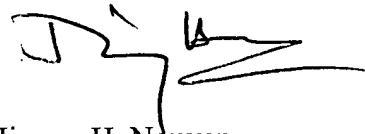
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tokonami et al. (US 6,515,646 B2; see Figs. 6-7), Park (US 6,160,535; see Figs. 3-7), Maekawa et al. (US 5,764,207; see Fig. 4), and Kondo et al. (US 5,694,145; see Figs. 11-12), all disclose a related LCD device comprising a data driver applying effective pixel signals to the plurality of data lines during the data apply period and dummy pixel signals to the plurality of data lines during the blanking period.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy H. Nguyen whose telephone number is 571-272-7675. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached at 571-272-7681. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'JH Nguyen', with a long horizontal stroke extending to the right.

JHN

December 22, 2006

Jimmy H. Nguyen
Primary Examiner
Technology Division: 2629